

REMARKS

Responsive to the Office Action mailed on December 21, 2006 in the above-referenced application, Applicant respectfully requests amendment of the above-identified application in the manner identified above and that the patent be granted in view of the arguments presented. No new matter has been added by this amendment.

Present Status of Application

Claims 23-27 are pending in this application. Claim 27 is withdrawn from consideration. Claims 23-26 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. Claims 23 and 25 are rejected under 35 U.S.C. 102(b) as being anticipated by Hong (U.S. 5,966,600; hereinafter "Hong"). Claims 24 and 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hong. Claim 23 is rejected under 35 U.S.C. 103(a) as being unpatentable over Tu (U.S. 6,100,138; hereinafter "Tu"), in view of Blosse et al (U.S. 6,979,640; hereinafter "Blosse") and Tsai et al (U.S. 2004/0021473; hereinafter "Tsai"). Claims 25-26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tu, Blosse and Tsai, and in further view of Hartner (U.S. 6,043,529).

In this paper, claim 23 is amended to more clearly identify novel features of the claimed invention and meet the requirements of 35 U.S.C. 112. Specifically, claim 23 is amended to recite that the passivation layer is in contact with the doped region. Support for these amendments can be found in page 7, line 26 to page 8, line 9 and FIGs. 1F-1I of the drawings in this application. Claim 27 is amended to correspond to claim 23.

Reconsideration of this application is respectfully requested in light of the amendments and the remarks contained below.

Rejections Under 35 U.S.C. 112

Claims 23-26 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. In this paper, claim 23 has been amended to cancel the

wording "conformally." Applicant respectfully requests that the rejections under 35 U.S.C. 112 be withdrawn.

Rejections Under 35 U.S.C. 102(b)

Claims 23-26 are rejected under 35 U.S.C. 102(b) as being anticipated by Hong. To the extent that the grounds of the rejections may be applied to the claims now pending in this application, they are respectfully traversed.

The rejection of a claim for anticipation under 35 U.S.C. §102 requires that the prior art reference include every element of the rejected claim. Furthermore, as stated by the Federal Circuit, the prior art reference must disclose each element of the claimed invention "arranged as in the claim." *Lindermann Maschinenfabrik GMBH v. American Hoist and Derrick Co.*, 221 USPQ 481, 485 (Fed. Cir. 1984).

A amended, claim 23 recites a structure for a bit line contact hole comprising a passivation layer serving as a diffusion barrier, formed on the inner landing pad, the transistor, and the substrate, wherein the passivation layer is in contact with the doped region.

Hong discloses a structure of a DRAM in which a polysilicon layer 44 is deposited on a substrate 10 and covering source/drain regions 34, 36. A CMP process involving a planarizing layer 48 is followed by the formation of dielectric layer 50 on the polysilicon layer 44. See column 6, line 47 to column 7, line 37, and Figs. 4-6 of Hong.

In the rejections, the Examiner identifies source/drain regions 34, 36, polysilicon layer 44 and dielectric layer 50 as the alleged doped region, inner landing pad, and passivation layer of claim 23. However, as can be seen in Fig. 5 of Hong, dielectric layer 50 (i.e., the alleged "passivation layer" of claim 23) is not in contact with source/drain regions 34, 36 (the alleged "doped region" of claim 23). To the contrary, polysilicon layer 44 is interposed between the dielectric layer 50 and source/drain regions 34, 36.

For at least the reasons described above, it is Applicant's belief that the cited reference fails to teach or suggest all the limitations of claim 23. Applicant therefore respectfully requests that the rejection of claim 23 be withdrawn and the claim passed to issue. Insofar as claims 24-26 depend from claim 23 either directly or indirectly, and therefore incorporate all of the limitations of claim 23, it is Applicant's belief that these claims are also in condition for allowance.

Rejection Under 35 U.S.C. 103(a)

Claims 24 and 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hong. As noted above in connection with Hong, it is Applicant's belief that claims 24 and 26 are allowable by virtue of their dependency from claim 23. For this reason, the Examiner's arguments in connection with these claims are considered moot and will not be addressed here.

Claim 23 is rejected under 35 U.S.C. 103(a) as being unpatentable over Tu in view of Blossie and Tsai.

MPEP 2142 reads in part:

To establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations. The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, and not based on applicant's disclosure. *In re Vaeck*, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991).

In connection with the third criteria, MPEP 2143.03 goes on the state:

To establish *prima facie* obviousness of a claimed invention, all the claim limitations must be taught or suggested by the prior art. *In re Royka*, 490 F.2d 981, 180 USPQ 580 (CCPA 1974). "All words in a claim must be considered in judging the patentability of

that claim against the prior art." *In re Wilson*, 424 F.2d 1382, 1385, 165 USPQ 494, 496 (CCPA 1970).

Tu discloses a DRAM structure in which IPD1 130 is formed on a landing pad 120, transistor and substrate 100. The nitride barrier layer 135a is then formed on the planar surface of IPD1 130. See column 4, lines 55-64 and Fig. 11A of Tu.

In the rejections, the Examiner identifies source/drain regions 115, storage node 120a, and nitride barrier layer 135a of Tu as the alleged doped region, inner landing pad, and passivation layer of claim 23. However, as can be seen in Fig. 11A of Tu, nitride barrier layer 135a (i.e., the alleged "passivation layer" of claim 23) is not in contact with source/drain regions 115 (the alleged "doped region" of claim 23). To the contrary, at least IPD1 130 and storage node 120 is interposed between the nitride barrier layer 135a and source/drain regions 115.

It is further noted that neither Blosser nor Tsai teach or suggest a passivation layer serving as a diffusion barrier, formed on the inner landing pad, the transistor, and the substrate, wherein the passivation layer is in contact with the doped region.

It is therefore Applicant's belief that even when taken in combination, the prior art references relied upon by the Examiner do not teach or suggest all the limitations of claim 23. For at least this reason, a *prima facie* case of obviousness cannot be established in connection with this claim. Furthermore, as it is Applicant's belief that a *prima facie* case of obviousness is not established for claim 23, the Examiner's arguments in regard to the dependent claims are considered moot and are not addressed here. Allowance of claims 23-26 is respectfully requested.

Claims 25-26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tu, Blosser, Tsai and in view of Hartner. As discussed above, it is Applicant's belief that claims 25-26 are allowable by virtue of their dependency from claim 23. For this reason, the Examiner's arguments in connection with these claims are considered moot and will not be addressed here.

Claim 27

As noted by the Examiner, upon allowance of a generic claim, Applicant will be entitled to consideration of claims to additional species which are written in dependent form or otherwise include all the limitations of the generic claim as provided by 37 CFR 1.141.

Claim 27 includes all of the limitations of claim 23 and further recites that the passivation layer has a thickness of 110~130Å. On the allowance of claims 23, Applicant respectfully requests the consideration of claim 27.

Conclusion

The Applicant believes that the application is now in condition for allowance and respectfully requests so. The Commissioner is authorized to charge any additional fees that may be required or credit overpayment to Deposit Account No. **502447**. In particular, if this response is not timely filed, then the commissioner is authorized to treat this response as including a petition to extend the time period pursuant to 37 C.F.R. § 1.136(a) requesting an extension of time of the number of months necessary to make this response timely filed and the petition fee due in connection therewith may be charged to Deposit Account No. **502447**.

Respectfully submitted,

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